



US Army Corps
of Engineers
Kansas City District

TUTTLE CREEK DAM

FACT SHEET

April 2001

TOTAL FIX ALTERNATIVES

The alternatives being considered that would essentially eliminate the risk of release of the lake after a major earthquake are discussed below. These discussions are conceptual and all aspects of each option will not be evaluated in great detail until the community has had an opportunity to provide input. No attempt is made to document all of the positive and negative aspects of each option since these evaluations are currently only conceptual.

Remove the Dam: Removal of the dam would involve excavating a section of the dam approximately 500 feet wide and reconstructing the river channel through this gap in the dam. This option would eventually return the river to its natural flow condition and would eliminate all existing project benefits including flood protection. The Manhattan levee unit would also no longer be effective since it was designed assuming the presence of Tuttle Creek Dam. Extensive measures to minimize sediment transport from the existing lake area would be necessary.

Replace the Dam:

Dam Replacement would consist of treatment of the natural sands downstream of the existing dam to prevent them from liquefying during an earthquake. A new dam would be constructed on the treated area immediately downstream of the existing dam. Although it is possible that some of the material from the existing dam could be used, most of the soil to construct the new dam would need to be brought in from outside of the immediate dam area. Replacement of the dam could involve a significant lowering of the lake level during construction but would not necessarily require it.

Stabilize the Soil Beneath the Dam:

Given that the earthquake causes the sands beneath the dam to liquefy, one method to address this situation is to prevent the sands from liquefying. Technology exists that can inject cement or other materials into the soil to prevent it from losing its strength during an earthquake. There are other technologies that can densify the sands by forcing gravel into the sands. Other applicable technologies may also exist that can prevent the sands from losing their strength during the earthquake. This option may or may not require extended lowering of the lake during construction.

Enlarge the Dam: Enlarging the dam would consist of adding large volumes of soil or rock to the upstream and/or downstream slopes to add weight to help stabilize the dam. Most of this soil would need to be brought in from outside of the immediate dam area. This option may or may not require extended lowering of the lake during construction.

This fact sheet is published by the U.S. Army Corps of Engineers, the lead agency for the Tuttle Creek Dam Safety Assurance Program. Comments or questions about this fact sheet or the Dam Safety Assurance Program should be directed to Bill Empson of the Kansas City District, Corps of Engineers at (816) 983-3556 or by E-mail at tcdam.nwk@usace.army.mil. Questions or comments about lake operations or Tuttle Creek project office activities should be directed to the on-site Operations Manager, Brian McNulty at 785-539-8511. For additional information, visit our web site: <http://www.nwk.usace.army.mil/tcdam>



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